

WHAT IS CLAIMED IS:

1           1.     A liquid sensing apparatus comprising a liquid containing vessel  
2     having an insulating inner surface, an outer surface and electronic components  
3     disposed between said insulating inner surface and said outer surface, said  
4     electronic components providing a sensory output indicative of a liquid level of a  
5     liquid within said liquid containing vessel.

1           2.     The liquid sensing apparatus as in claim 1, wherein said electronic  
2     components include a capacitor comprising at least two conductive plates  
3     disposed adjacent to the insulating inner surface.

1           3.     The liquid sensing apparatus as in claim 2, wherein said liquid  
2     containing apparatus includes a lip and a bottom and said conductive plates  
3     extend substantially from said lip to said bottom.

1           4.     The liquid sensing apparatus as in claim 2, wherein at least one of  
2     said conductive plates extends beneath at least part of a bottom of said  
3     insulated inner surface.

1           5.     The liquid sensing apparatus as in claim 1, wherein the electronic  
2     components provide said sensory output with at least one characteristic that  
3     varies as a function of said liquid level.

1           6.     The liquid sensing apparatus as in claim 5, wherein said  
2     characteristic comprises at least one of amplitude, frequency, repetition rate  
3     and duty cycle.

1           7.     The liquid sensing apparatus as in claim 1, in which said sensory  
2     output is perceptible by a changeable non-visual attribute.

1           8.     The liquid sensing apparatus as in claim 1, wherein said sensory  
2     output is one of audible, vibratory and tactile.

1           9.     The liquid sensing apparatus as in claim 5, wherein said sensory  
2     output assumes a distinct characteristic said liquid level is at or above a  
3     predetermined threshold liquid level.

1           10.    The liquid sensing apparatus as in claim 9, wherein said sensory  
2     output achieve a continuous state when said liquid level is at or above the  
3     threshold liquid level.

1           11.    The liquid sensing apparatus as in claim 1, wherein the sensory  
2     output is a voice annunciation respecting the liquid level.

1           12.    The liquid sensing apparatus as in claim 1, wherein said liquid  
2     containing vessel comprises one of a cup, a pot, a jug, a pitcher, a carafe, and  
3     a measuring cup.

1           13.    The liquid sensing apparatus as in claim 1, wherein said electronic  
2     components include a removable battery and said outer surface includes a door  
3     or plate for accessing said removable battery.

1           14.    The liquid sensing apparatus as in claim 1, wherein said liquid  
2     containing vessel includes an insulating inner wall, an outer wall and a space  
3     therebetween, said insulating inner surface forming an external part of said  
4     inner wall and said outer surface forming an external part of said outer wall.

1           15.    The liquid sensing apparatus as in claim 14, wherein said  
2     electronic components include a capacitor formed of at least two conductive  
3     plates disposed adjacent to an internal surface of said insulating inner wall, and

wherein said electrical components are disposed within a hollow space between the inner wall and the outer wall.

16. A liquid sensing apparatus comprising a liquid containing vessel including a wall having an inner surface and an opposed outer surface and formed of an insulating material, a duality of conductive plates disposed on said outer surface and covered by a handle member permanently affixed to said liquid containing vessel and having electronic components therein, said electronic components including a capacitor formed of said duality of conductive plates and providing a sensory output indicative of a liquid level of a liquid within said liquid containing vessel.

17. A method for sensing liquid level comprising:  
providing a liquid containing vessel having an insulating inner surface and an outer surface and electronic components disposed therebetween, said electronic components including at least two conductive plates of which at least one conductive plate is disposed between said inner surface and said outer surface in proximity with a volume of the vessel;  
providing a liquid with a liquid level in said liquid containing vessel so as to at least partly occupy the volume, thereby affecting a capacitance value associated with the conductive plates, the capacitance varying with the liquid level;  
sensing the capacitance that varies with said liquid level; and  
providing a sensory output that is indicative of said liquid level, at least partly as a function of the capacitance parameter.

18. The method as in claim 17, wherein said providing a sensory output comprises providing a sensory output signal that is perceivable by a non-sighted user.

19. The method as in claim 18, wherein said providing a sensory output comprises providing a signal that varies as to at least one of amplitude,

frequency, repetition rate and duty cycle as a function of at least one of a sensed capacitance within a range corresponding to a range of liquid levels, and a sensed capacitance corresponding to the liquid level reaching a predetermined threshold.

20. The method as in claim 19, wherein a continuous change of said liquid level produces a continuous change in the sensory output.